

HIV Infogram

Information update on HIV/AIDS
and Sexually Transmitted Diseases
March 2002 - HIV/AIDS Program

Update on Sexual Transmission of HIV

Recently there have been several articles in the popular press that have distorted or given misleading information about the sexual transmission of HIV. This Infogram will briefly summarize what is currently known about the sexual transmission of HIV.

We have known since early in the epidemic that unprotected sex can transmit HIV. Worldwide most new infections result from sexual transmission, but not all sexual practices are equally likely to result in HIV transmission. It is impossible to precisely estimate the individual risks of each sexual act. The likelihood of transmission depends greatly on the chance that a partner carries HIV, the stage of that person's infection, and the presence or absence of other sexually transmitted diseases. Although much is still controversial, we do know that:

1. HIV is commonly transmitted sexually by penile-anal intercourse. The receptive partner (bottom) is at much more risk, but the insertive partner (person putting his penis into the anus) can also get infected.
2. HIV is commonly transmitted sexually by penile-vaginal intercourse. The female is at more risk, but the male partner also can get infected.
3. HIV can be transmitted by oral sex. Oral sex is much less risky than anal or vaginal sex.
4. Other factors can affect transmission risk: the presence of other sexually transmitted diseases (STDs), viral load, condom use and douching.

ANAL SEX TRANSMISSION OF HIV

Anal sex is the most efficient means of sexual HIV transmission. It is clear from many epidemiological and biological studies that most HIV transmission between men who have sex with men occurs via unprotected anal intercourse. Studies of homosexual men have shown consistently that the receptive partner (bottom) in anal intercourse is at higher risk of HIV infection.^{1,2,3} The rectal mucous membranes seem to have more receptors to bind HIV and the tissue is more easily traumatized, leading to more easy access for HIV transmission. The area susceptible to

Top to bottom transmission:

Semen carrying HIV can enter the body of the receptive (or bottom) partner through the mucous membrane (lining) of the rectum.

Bottom to top transmission:

Blood carrying HIV can enter the body of the insertive (or top) partner through the head of the penis or other cuts, sores or lesions on the penis.

infection is much larger for the bottom (entire lining of the rectum) than in the top (head of the penis, exposed urethra). The bottom is exposed to a larger quantity of infectious fluid (ejaculate) than the top (blood from possible cuts or tears). And the bottom retains the secretions within the body after sex while the top is only exposed during the actual sex act.

Even though the bottom is at higher risk during anal sex, studies have shown that HIV infection has also occurred among men reporting only insertive anal intercourse (top)."^{4,5,6,7}

VAGINAL SEX TRANSMISSION OF HIV

Vaginal sex can transmit HIV to either the male or the female partner, but numerous studies in developed countries have shown that in the absence of other risk factors (like STDs) men are two to three times more likely to transmit HIV to women than vice versa. The area susceptible to infection is much larger in women (vagina, cervix and uterus) than in men (head of the penis, exposed urethra). Women are exposed to a larger quantity of infectious fluid (ejaculate) than men (vaginal fluids). Vaginal fluids contain less HIV on the average than semen. And women retain the secretions within the body after sex while men are only exposed during the actual sex act.

Male to female transmission:

Semen carrying HIV can enter the body of the female partner through the lining of the vagina, cervix and uterus.

Female to male transmission:

Vaginal secretions carrying HIV can enter the body of the male partner through the head of the penis, the exposed urethra, or other cuts, sores or lesions on the penis.

Even though the female is at higher risk during vaginal sex, studies have shown that HIV infection also occurs from female to male.^{8,9,10,11}

ORAL SEX TRANSMISSION OF HIV

Oral sex is much less risky than anal or vaginal sex. However, well-documented cases of HIV transmission through oral exposure to semen or vaginal fluids have been documented so that fellatio (mouth to penis contact) and cunnilingus (mouth to vulva contact) cannot be considered to be totally safe practices. The relative inefficiency of HIV transmission through

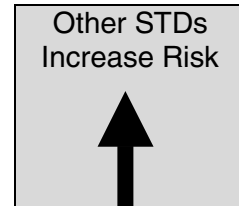
oral sex suggests that the likelihood of HIV transmission by the oral route is many times less likely than penile-vaginal or penile-anal intercourse. Although most cross-sectional studies of HIV transmission in homosexual men have not reported an elevated relative risk associated with oral intercourse, there are case reports of seropositive men whose only reported risk is oral intercourse. Receptive oral intercourse has been identified as a risk in studies of homosexual men seroconverting while under study, although at a significantly lower risk than anal intercourse.^{12, 13} But even insertive oral sex partners (person whose penis is being stimulated) have become infected with HIV.

Oral Sex: Semen or vaginal secretions carrying HIV can enter the body of the receptive partner (person putting his/her mouth on the other persons genitals) through the lining of the mouth.

Other Factors Can Affect Transmission Risk: The Presence Of Stds, Viral Load, Condom Use And Douching.

HIV transmission and other sexually transmitted diseases (STDs)

The results of multiple studies make clear that the presence of other STDs can greatly increase the transmission of HIV. If you have an STD (and you have unprotected sex with someone with HIV), you are more likely to get HIV. HIV positive people co-infected with another STD are more likely to transmit HIV to sexual partners. Many STDs can be present with few or no symptoms. In summary, an STD makes it both easier to get and to give HIV. (For further discussion of the connection between HIV and other STDs, please see **Infogram: [STDs Enhance Transmission of HIV](#)**.)



HIV transmission and viral load

Viral load is the amount of the virus active in the body. Risk of transmission appears to be highest during both early and late stages of HIV infection when viral load is the highest.^{14, 15,16,17}

Some people in these stages will have few/no symptoms.

Antiretroviral therapy usually decreases the amount of HIV in the genital tract as well as the blood. There are individuals, however, who have undetectable levels of virus in the blood, and yet have virus found in the genital tract. Therefore, HIV+ individuals must assume that they are potentially infectious to their partner even if their virus is suppressed in the blood due to therapy.



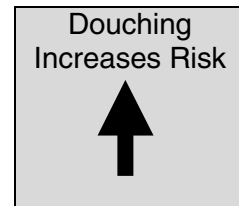
HIV transmission and condom use

The results of multiple studies make clear that condoms are highly effective in preventing the sexual transmission of HIV. (For further discussion of HIV transmission and condom use, please see **[Efficacy of condoms in preventing STDs](#)**.)



HIV transmission and douching

Douching may destroy the good bacteria that protect the lining of the vagina and anus. It may dry out and traumatize rectal and vaginal mucosa and make it more susceptible to tears that would facilitate transmission^{18,19}. Douching after sex can actually push disease causing germs further into the body and make infection more likely. Therefore, douching is not recommended.



Summary:

- Data defining how risky each individual sex act is are not very useful, but we can say that certain sexual activities are more risky than others.
- The presence of another STD greatly increases the risk of transmission.
- A high viral load increases the risk of transmission.
- Persons with very low or undetectable viral load can still transmit.
- Douching increases the risk of transmission.
- Correct and consistent condom use greatly decreases the risk of transmission.

For more information please call the HIV/STD Information Line at (206) 205-7837.

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